

Colorado Plateau Native Plant Program

Five Year Strategy & Action Plan

January 2013

Colorado Plateau Native Plant Program

Five Year Strategy & Action Plan

INTRODUCTION

The Colorado Plateau Native Plant Program (CPNPP) was created in response to a lack of sufficient variety and quantity of regionally adapted native plant materials for ecosystem restoration in the Colorado Plateau ecoregion. The Colorado Plateau as defined by our program includes three EPA Level 3 Ecoregions: 1) Colorado Plateaus; 2) Arizona/New Mexico Plateaus; and 3) Arizona/New Mexico Mountains (Figure 1). Ranging in elevation from lower than 2,000 feet (600 m) at the bottom of the Grand Canyon to over 13,000 feet (3960 m) on the tops of the LaSal Mountains in southeastern Utah, and San Francisco Peak in central Arizona, the area includes a wide variety of ecosystems and associated plant communities and the demand for native plant materials has increased significantly over the past several years because of the need to restore these ecosystems to more resilient states.

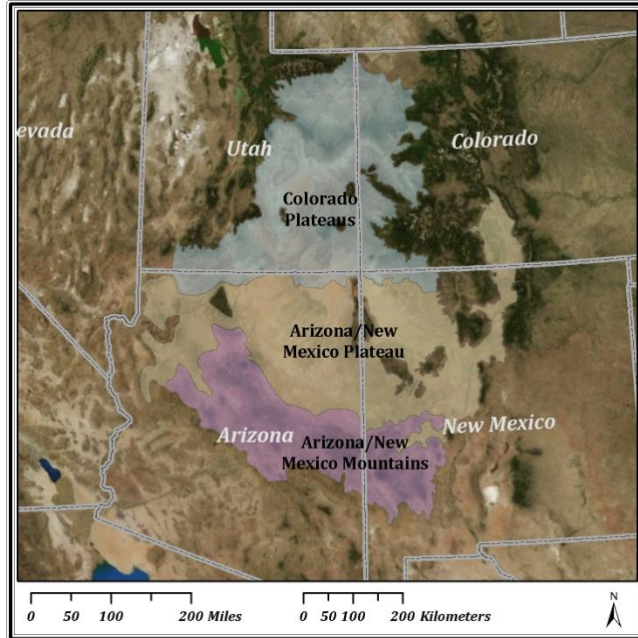


Figure 1. Colorado Plateau Ecoregion

species, it will be necessary to increase the amount of materials through the agricultural practice of seeding and growing native species as a crop, from which seed is harvested. For many native “workhorse” species, or those that are most commonly used and needed in large quantities for re-

Seed can be made available in two unique manners. The first is through wildland seed collection, which is simply the collection of native seed from wildland settings. While effective for some species, this may not be practical or economical for most species given annual seed production in these wildland settings, access, or a variety of other reasons. For these latter

MISSION

Our mission is to facilitate the increased availability and use of native plant materials in the restoration of native plant communities and ecosystems of the Colorado Plateau.

VISION

The vision of the Colorado Plateau Native Plant Program is a Colorado Plateau that supports healthy and resilient native plant communities now and for future generations.

vegetation projects, there is a need for them to be available at reasonable prices. For this to happen, they need to be produced in such a manner.

SUPPLY AND DEMAND

Demand for native seed fluctuates annually based primarily on variations in annual wildfire incidents. Because of this, the seed industry is challenged in its ability to predict and produce the amount of seed necessary for restoration, as well as emergency stabilization needs. And, as a result, there are often either deficits or over-abundances of supplies of critical native materials. It is our challenge to stabilize this native seed market by identifying resource restoration needs beyond those used for wildfire restoration activities, including wildlife habitat or range improvement activities. These other needs must be explored and expanded in order to help provide stability to the market.

Nationally, the Bureau of Land Management (BLM) purchases a tremendous amount of seed annually for revegetation purposes, mostly for fire rehabilitation. In 1999, which was a year with many large fires, the BLM bought over 6.5 million pounds of seed and, as is shown in Figure 2, the BLM bought more than twice the amount of non-native as native seed. In contrast, the BLM purchased over 7 million pounds of seed in 2007 and more than half was native. The availability of native seed has been a limiting factor and it is clear that efforts are needed to increase the supply of native plant materials for future uses. In addition, there is a need to increase awareness regarding the values associated with using native plant materials for ecosystem restoration.

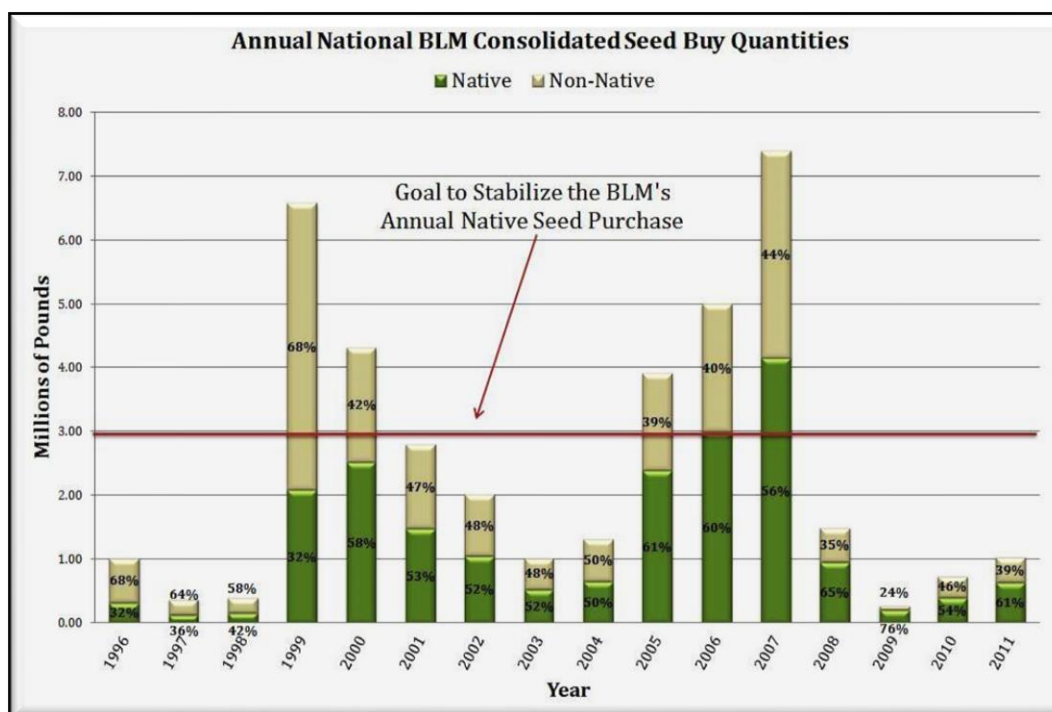


Figure 2. BLM's National **Consolidated Seed Buy** quantities between 1996 and 2011 and goal to stabilize the native seed market by purchasing approximately 3 million pounds of native seed annually

The BLM at its partners are working to increase seed storage capacity, which will allow us to improve our ability to purchase and store seed and to help stabilize commercial development and wildland collections of native seed, and ultimately to reduce the price of seed.

By implementing this strategic plan, the Colorado Plateau Native Plant Program will be better able to:

- Increase the knowledge and understanding of the values and importance of using native plant materials for ecosystems restoration.
- Contribute to the increased availability of regionally adapted native plant materials for use in restoration of native plant communities.
- Identify and provide access to management practices that will result in the restoration of native plant communities.
- Provide an economic benefit to businesses in the Colorado Plateau and facilitate a market for native plant materials and services.

GOALS AND OBJECTIVES

Three following goals were identified to assist in the development and ongoing operation of the Colorado Plateau Native Plant Program. Objectives are designed to meet immediate, as well as long term goals. Some represent one-time events, while others are ongoing with regularly scheduled updates. The timelines associated with each objective are described below.

Goal 1 – Identify existing and future needs for native plant materials for restoration purposes on the Colorado Plateau

Objectives

1.1 Maintain an Updated Five-Year Strategy and Action Plan.

Action Item 1.1.1: Update the 5-year strategy and action plan annually in accordance with the BLM's Budget Planning System (BPS) in order to establish and maintain the program's annual operating budget needs.

Action Item 1.1.2: Identify Partners for this program and develop a Memorandum of Understanding (MOU) that outlines the cooperation among Federal, State, Tribal, and local governments, and non-governmental partners and stakeholders in the development and implementation of an ecoregion-wide program (CPNPP) for the development of native plant materials for ecosystem restoration. Current and potential partners will be updated as necessary.

Action Item 1.1.3: Identify current and future native plant materials needs on the Colorado Plateau. Update annually. [Appendix A](#) includes a list of species identified for development for this ecoregion.

Action Item 1.1.4: Identify potential facilities for increase of native species.

Action Item 1.1.5: Annual work plans will be completed following the BLM's budget system typically the spring before the fiscal year to which funds will apply. These plans will be reviewed by the CPNPP Technical Committee.

Action Item 1.1.6: Continue to build a network of growers in the Colorado Plateau.

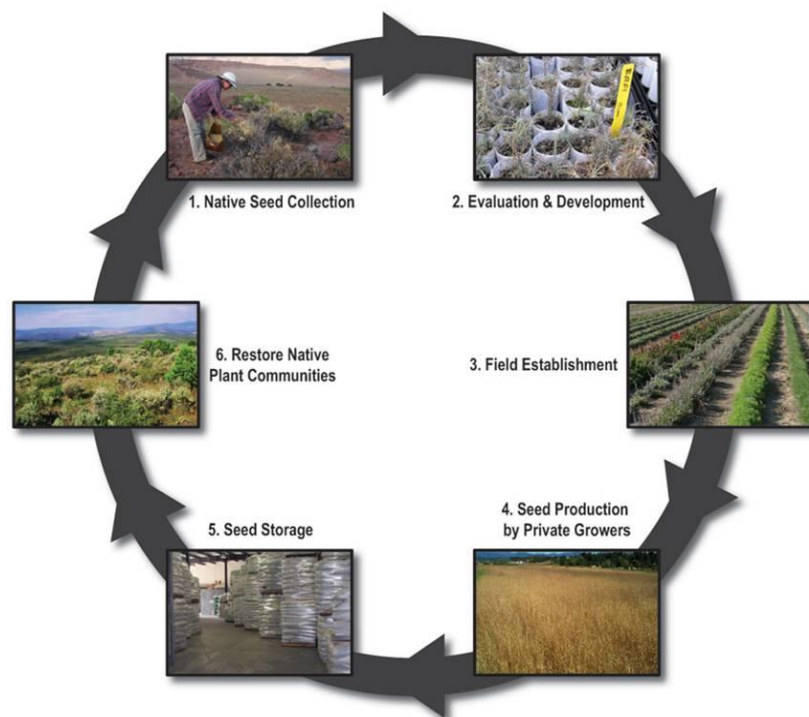
Action Item 1.1.7: Identify needed “Working Groups” to focus on a variety of tasks such as: 1) Research and Development; 2) Seed Increase and Production; 3) Outreach and Education; 4) Seed Certification; and 5) Liaison with private industry. Working group members will be selected from interested individuals associated with this program. No previous experience in any of the focus areas is required, but could be beneficial to completing associated tasks. Working group team members will determine the appropriate means for working on their tasks, including the number and timing of meetings, how meetings are to be conducted (e.g. in person or via conference calls). They will work closely with the CPNPP Coordinator to identify tasks, priorities, and expected completion dates.

Goal 2 – Follow the National Native Plant Materials Development Program protocol¹ to develop an adequate supply of diverse, economical, and regionally-adapted native plant materials for restoration efforts on the Colorado Plateau.

Objectives

2.1 Native Seed Collection – Annually collect seed from each of the four states included in the Colorado Plateau.

Action Item 2.1.1: Work within the agencies and with partners to set criteria in order to establish a list of priority *Target Species* for collection purposes. These may go beyond those identified in Appendix A.



¹ The National Native Plant Materials Development Program protocol includes six steps: 1) Native Seed Collection; 2) Evaluation and Development; 3) Field Establishment; 4) Seed Production by Private Growers; 5) Seed Storage; and 6) Restoration of Native Plant Communities. The CPNPP will not actively be involved in Restoring Native Plant Communities (Step 6), but will concentrate on following Steps 1-5 of this strategy and report accomplishments in each category annually.

BLM's National Plant Materials Development Program

Action Item 2.1.2: Utilized Chicago Botanical Garden interns as well as other sources to collect *Target Species* in the Colorado Plateau.

Action Item 2.1.2: Inventory existing native seed materials, maintain information on species collected using the SOS collections form, and establish an on-line database of seed availability, location, and quantity.

Action Item 2.1.3: Work within the agency and with partners to establish a permitting process for improving the ability to allow needed wildland seed collections on public lands that: 1) is simple to implement; and 2) allows for monitoring where seeds are being collected; and 3) monitors the amount of seed being collected from each site.

Action Item 2.1.4: Assure that all collections include information necessary for *Site Identified* certification.

2.2 Plant Materials Evaluation and Development – Continue these efforts on priority native plant species with a focus on genetically appropriate plant materials, as well as site characteristics, including those of biological soil crusts, that facilitate the restoration of native ecosystems in the face of climate change.

Action Item 2.2.1: Work within the agencies and with partners to establish clear criteria for prioritizing those species that will be evaluated for commercial development.

Action Item 2.2.2: Work with the USGS Southwest Biological Science Center, US Forest Service, UP Partnership, NRCS Plant Material Centers, and other partners to evaluate native plant materials for future increase.

Action Item 2.2.3: Continue genetic adaptability studies on priority target species to aid in the understanding of “seed zones” and appropriate distribution of such materials in restoration efforts.

Action Item 2.2.4: Begin research on biological soil crust and associated characteristics that are of primary importance in stabilizing and protecting soils from wind and water erosion, influencing water infiltration and runoff, and contributing to nitrogen and carbon in desert soils. These characteristics are critical for enhanced abilities in the restoration of Colorado Plateau Ecosystems.

2.3 Field Establishment – Increase native seed for distribution to private growers.

Action Item 2.3.1: Based on Evaluation and Development findings, establish increase fields for purposes of providing native seed to growers.

2.4 Seed Production by Private Growers

Provide native seed to private growers in order to increase production of native plant materials. Focus on developing the program for growers in the Colorado Plateau, but use all available sources for increasing production.

Action Item 2.4.1: CPNPP will work closely with private growers to enable them to grow native plants for production of seed or other plant materials in demand for use especially within the Colorado Plateau. Assistance will be in the form of information about: 1) available native plant materials; and 2) known best management practices for the production of native plant materials; as well as through 3) workshops and field demonstrations addressing a wide variety of aspects associated with native plant materials.

Action Item 2.4.1: CPNPP will work closely with private growers to enable them to grow native plants for production of seed or other plant materials in demand for use especially within the Colorado Plateau. Assistance will be in the form of information about: 1) available native plant materials; and 2) known best management practices for the production of native plant materials; as well as through 3) workshops and field demonstrations addressing a wide variety of aspects associated with native plant materials.

2.5 Seed Storage

Use existing facilities and identify future needs to store native plant materials for use in ecosystem restoration efforts.

Action Item 2.5.1: Identify native plant materials needs for restoration efforts beyond those necessary for Emergency Stabilization and Rehabilitation (ESR) and use available seed storage facilities to help stabilize the market for these materials.

Action Item 2.5.2: Identify additional seed storage needs and potential locations and partners to increase the capacity of storage facilities.

2.6 Ecosystem Restoration

All research and development associated with this program is focused on the restoration of native ecosystems and are in support of the BLM's national Manual (1740) and Handbook (1740-2) direction.

2.7 Purchasing Authorities

While included in the National Native Plant Materials Development Program, it is an important objective to develop ecoregion-based protocols that assist in the creation of contracts and agreements to help maximize the cost effectiveness of available funding.

Goal 3 – Identify existing best practices and work with partners to develop and test new methodologies to ensure successful establishment and persistence of native plant materials.

Objectives

3.1 Identify existing information regarding technology and methods for successfully establishing native plant materials.

Action Item 3.1.1: Work with partners, such as Plant Materials Centers, universities, and Forest Service Research to provide information regarding existing restoration technologies and identify research opportunities to improve those capabilities.

3.2 Identify adaptable prescriptions for different landscapes and species.

Information regarding existing prescriptions will be compiled, evaluated, and updated regularly as new information becomes available.

Action Item 3.2.1: Develop Restoration Paradigms and Guidelines that work to meet a variety of goals and objectives on the ground, and that are cost-effective.

Action Item 3.2.2: Use existing site information, such as Ecological Site Descriptions, within each ecological section to assist in the development of restoration prescriptions.

Action Item 3.2.3: Adaptable management prescriptions will be developed over time as different landscapes are defined and as species are identified for restoration and rehabilitation efforts.

3.3 Ensure adequate evaluation of native plant materials for use in restoration.

Action Item 3.3.1: Develop a screening guide to assist in the determination of the feasibility of using any given germplasm for release.

Action Item 3.3.2: Publish evaluation information on website as well as in hard copy format.

Goal 4 – Identify priority species or genera for work on establishing available registered herbicides for use in their growth by native seed producers.

Objectives

4.1 Annually, work with research institutions to conduct studies that will provide information to aid in the registration of herbicides for use by growers on priority native seed

Action Item 4.1.1: By January 2013, develop list of first priority native plant species for which this research will be focused.

Action Item 4.1.2:

Goal 5 – Communicate across agencies, partners, and the public regarding the roles, responsibilities, values, and products of the CPNPP.

Objectives

5.1 Establish demonstration areas, workshops, symposiums, publications, website, and other means to assist in efforts to inform individuals regarding the development and use of native plant materials for ecosystem restoration activities.

Action Item 5.1.1: Develop Outreach and Education materials focused on conservation, sustainability, restoration, and research issues related to the development and use of native plant materials. Provide information to: 1) increase awareness of the importance of locally adapted native plant species in ecosystem restoration; 2) enhance knowledge and skills associated with ecosystem restoration; 3) identify potential knowledge gaps and any efforts underway or planned to fill those gaps; and 4) provide recommendations for achieving restoration goals.

Action Item 5.1.2: Identify existing demonstration areas in order to showcase successes associated with the use of native plant materials in restoration efforts (identify the need for new demonstration areas).

Action Item 5.1.3: Update the CPNPP website at least quarterly. The web site will be a “living” element in the CPNPP program. It will include direction regarding how to find native plant materials for users. In addition, it will provide information to growers and other users about the status of species in development. Success stories will be highlighted and links will be made with other agency web pages.

Action Item 5.1.4: CPNPP Coordinator will attend, as well as sponsor or co-sponsor workshops and/or symposia annually. These will provide an opportunity to share information gathered through efforts of the Initiative.

Action Item 5.1.5: Transcripts for publications will be submitted as appropriate for inclusion in conference and symposia proceedings.

Action Item 5.1.6: Identify other options available for communications of available information regarding the development and use of native plant materials.

5.2 Identify and stimulate interest in new products (releases) as they become available.

Action Item 5.2.1: Develop a list of contacts including name, organization, location, phone, email, website, and capabilities by working group and by geographic area

Action Item 4.2.2: Announce the availability of information on the CPNPP web page regarding available and especially new releases of native seed to those included in the mailing list identified above in Objective 4.2, Action Item 1.

5.3 Develop outreach materials to assist in communications efforts

Action Item 4.3.1: In addition to publications and websites, develop a brochure that illustrates the value and uses of native plant materials on the Colorado Plateau.

Action Item 4.3.2: Complete annual reports at the end of each calendar year to discuss efforts in progress and completed, as well as any necessary updates to the CPNPP Program.

ROLES OF THE CPNPP COORDINATOR

The primary role of the CPNPP Coordinator is to maintain awareness and distribute information regarding research and development of native plant materials for Colorado Plateau restoration efforts. Following are duties that have been identified for the CPNPP Coordinator:

- Coordinate various actions dealing with the management of native plants on the Colorado Plateau for the BLM. Actions involving the restoration and conservation of native plant communities will be the focus of this program. **Emphasis will be placed on at-risk and degraded watersheds** to achieve broad improvements in ecosystem health on the Plateau.
- Ensure **coordination and consistency of native plant materials collection and development** and native plant management within and among the Plateau states of Utah, Colorado, New Mexico, and Arizona.
- Ensure that **development of native plant materials is conducted using proper protocol**. Coordinate these efforts with the appropriate State Offices and Washington Office Plant Conservation Program Lead, Seeds of Success Coordinator, and the National Seed Coordinator.
- Ensure that development of native plant materials is **coordinated internally with other Agency program needs**, such as Wildlife, Endangered Species, Fire, Riparian, Weeds, Range, and Energy Development.
- **Coordinate the organization of and the implementation** of the Colorado Plateau Native Plant Program. This will involve development of the **organization structure, identification of roles and responsibilities, and coordination** of all activities associated with the CPNPP. The incumbent will be the primary contact for the CPNPP.
- **Coordinate activities with the various external entities** working with native plants on the Plateau including the Uncompahgre Plateau working group, various universities and colleges, other federal agencies (e.g. USFS, NPS, FWS, NRCS, ARS, and USGS), State agencies, such as the Utah Division of Wildlife Resources, CPCEU, and others.
- Coordinate the **development or compilation of a management assessment and strategy** for the Plateau. This assessment and strategy will include an overall analysis of **biological, physical, and socio-economic elements** of the Plateau, identification of management concerns and needs, and criteria for use in identification and prioritization of management, conservation, and restoration activities.
- Insure that strategies developed are **consistent with national and state initiatives and priorities for the Department of Interior and BLM**, including the Healthy Rangelands Initiative, Sagebrush Ecosystem Conservation Initiative, Healthy Forests Initiative, Healthy Land Initiative, etc.
- Conduct outreach activities associated with native plant management on the Plateau to **coordinate scientific studies and research being conducted** by various universities and research organizations such as USGS, universities, and entities associated with the CPCEU.
- **Provide technical expertise and technology transfer** including, but not limited to:
 - Web sites; Peer reviewed publications; Technical references; Technical bulletins; Technical notes; Symposia; Workshops; and Field trips.
- Coordinate and guide the **development and location of demonstration sites** that showcase the application of restoration and conservation activities and treatments on the Plateau.

Appendix A: Target Colorado Plateau Species for Commercial Production

The following species have been identified by the BLM's and partners associated with the Colorado Plateau Native Plant Program as those that we will emphasize our research and development for commercial production. This list does not include all species necessary for ecosystem restoration, but it does provide focus for this aspect of the program. This list is updated annually and includes the status of research and/or availability of germplasm. Release Names are those developed by the Uncompahgre Partnership (UP) and NRCS Los Lunas Plant Materials Center (LLPMC).

CPNPP 2012 Annual Meeting Priorities ²	Scientific Name	Common Name	Sage Grouse Habitat/Forage ³	Pollinator Species ⁴	Pioneer Species	Release Name
Forbs						
2	<i>Achillea millefolium</i>	Western yarrow	F	E,M		UP Dry Fork
CSU	<i>Amaranthus retroflexus</i>	Redroot amaranth				
4	<i>Asclepias asperula</i>	Spider Milkweed		M		
3	<i>Asclepias speciosa</i>			M		
3	<i>Astragalus</i>					
2	<i>Astragalus lonchocarpus</i>	Rushy Milkvetch	Y	Y		
CSU	<i>Baahia dissecta</i>	Ragleaf bahia				
2	<i>Balsamorhiza sagittata</i>	Arrowleaf Balsamroot	F/H	M		
CSU	<i>Chenopodium album</i>	Lambsquarters				
3	<i>Cleome lutea</i>	Yellow Spiderflower		M		
1, CSU	<i>Cleome serrulata</i>	Rocky Mountain Beeplant		M,L		
CSU	<i>Coreopsis tinctoria</i>	Golden tickseed				
3	<i>Corydalis aurea</i>			M		
2	<i>Crepis occidentalis</i>	Largeflower Hawksbeard	F			
3	<i>Dalea candida</i>	White Prairie Clover	F	M	Y	
P	<i>Erigeron pumilis</i>	Shaggy fleabane	F	L		Potential New Releases for 2012
P	<i>Erigeron speciosus</i>	Aspen fleabane	F	L		UP Dry Fork Hwy
P	<i>Eriogonum flavum</i>	Yellow eriogonum	F	L		Potential New Releases for 2012

² Priorities: 1 = Highest Priority; 2 = High Priority; 3 = Priority; 4 = Xerces Society recommendation for pollinators; CSU = Currently being studied at Colorado State University; P = In production

³ F = Forage; H = Habitat

⁴ E = Early Season; M = Mid Season; and L = Late Season pollinator attractors

CPNPP 2012 Annual Meeting Priorities ²	Scientific Name	Common Name	Sage Grouse Habitat/Forage ³	Pollinator Species ⁴	Pioneer Species	Release Name
Forbs						
3	<i>Eriogonum racemosum</i>	Redroot buckwheat	F	L		
p	<i>Eriogonum umbellatum</i>	Sulfur buckwheat	F	M		UP Burn Canyon
CSU	<i>Erysimum capitatum</i>	Sanddune wallflower/		E,M		
p	<i>Eurybia (Aster) glauca</i>	Gray aster	F	M,L		Potential New Releases for 2012
CSU	<i>Gaillardia pulchella</i>	Firewheel		M		
3	<i>Glycyrrhiza lepidota</i>			M		
3, 4	<i>Hedysarum boreale</i>	Utah sweetvetch	F	E,M		
4, CSU	<i>Helianthus annuus</i>	Annual sunflower		M,L		
1	<i>Heliomeris (Viguiera) multiflora</i>	Showy Goldeneye		L	Y	
2	<i>Heterotheca villosa</i>	Harry False Goldenaster		M,L		
2	<i>Lomatium spp. (nevadense)</i>	Desert Parsley (NV biscuit-root)	F			
3	<i>Lotus rigidus</i>			E		
4	<i>Lupinus caudatus</i>	Tailcup Lupine	F/H	E		
p	<i>Lupinus sericeus</i>	Silky Lupine	F/H	E		Potential New Releases for 2012
CSU	<i>Machaeranthera tanacetifolia</i>	Tansyleaf tansyaster				
CSU	<i>Monarda citriodora</i>	Lemmon beebalm		M		
CSU	<i>Oenothera pallida</i>	Pale Evening Primrose		E,M		
p	<i>Packera multilobata</i>	Lobeleaf Groundsel				UP Montrose
p	<i>Penstemon comarrhenus</i>	Dusty penstemon	Y	E,M		UP Delta
p	<i>Penstemon cyanocaulis</i>	Bluestem Beardtongue	Y	E,M		UP San Miguel
CSU	<i>Phacelia crenulata</i>	Cleftleaf Wildheleotrop				
4	<i>Phacelia hastata</i>	Silverleaf Phacelia		M		
4	<i>Ratibida columnifera</i>	Upright Prairie Coneflower		M		
CSU	<i>Sphaeralcea coccinea</i>	Scarlet globemallow	F	E		UP Potential New Releases for 2012
1	<i>Sphaeralcea parvifolia</i>	Smallflower Globemallow	F	E		
CSU	<i>Verbena bracteata</i>	Big bract verbena				
CSU	<i>Verbesina encelioides</i>	Golden crownbeard				
3	<i>Wyethia "Scabrethia" scabra</i>	Badlads Mule-ears		Y		

CPNPP 2012 Annual Meeting Priorities	Scientific Name	Common Name	Sage Grouse Habitat/Forage	Watershed Health	Pioneer Species	Release Name
Grasses						
2, P	<i>Achnatherum hymenoides</i>	Indian ricegrass	H	Y		White River, Star Lake
3,	<i>Aristida purpurea</i>	Purple three-awn				
3	<i>Bouteloua barbata</i>	Sixweeks Grama				
P	<i>Bouteloua curtipendula</i>	Sideoats Grama		Y		Niner (LLPMC), Vaughn
3	<i>Bouteloua gracilis</i>	Blue Grama		Y		
P	<i>Bromus marginatus</i>	Mountain Brome		Y		UP Cold Springs Mountain
2, P	<i>Elymus elymoides</i>	Squirreltail	H	Y	Y	UP Paradox
3, P	<i>Elymus trachycaulus</i>	Slender wheatgrass	H	Y		San Luis (LLPMC)
3	<i>Festuca arizonica</i>	Arizona fescue		Y		
3, P	<i>Koeleria macrantha</i>	Junegrass	H	Y		UP Sims Mesa
P	<i>Leymus cinereus</i>	Basin wildrye				UP Cochetopa
2	<i>Muhlenbergia asperifolia</i>	Scratchgrass				
3	<i>Muhlenbergia montana</i>	Mountain muhly		Y		
3	<i>Panicum virgatum</i>	Switchgrass		Y		
1	<i>Plueuraphis (Hilaria)</i>	Galleta		Y		
2, P	<i>Poa fendleriana</i>	Mutton grass	H	Y		UP Ruin Canyon Mut-
2, P	<i>Poa secunda</i>	Sandberg's bluegrass	H	Y		UP Colorado Plateau
3	<i>Schizachyrium scoparium</i>	Little Bluestem				
3, P	<i>Sporobolus cryptandrus</i>	Sand Dropseed	H			UP Dolores
CSU	<i>Vulpia microstachys</i>	Small fescue				
3,	<i>Vulpia octoflora</i>	Six-weeks fescue			Y	

